REPORT

ON THE

CAWNPORE EXPERIMENTAL STATION

FOR THE RABI SEASON, 1888.

ALLAHABAD:

NORTH-WESTERN PROVINCES AND OUDH GOVERNMENT PRESS.

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No. $\frac{A}{1299a}$ OF 1888.

DEPARTMENT OF LAND RECORDS AND AGRICULTURE, N.-W. P. AND OUDH.

DATED CAWNPORE, THE 9TH OCTOBER, 1888.

FROM

LIEUT.-COLONEL D. G. PITCHER,
OFFG. DIR. OF LAND RECORDS AND AGRICULTURE,
N.-W. PROVINCES AND OUDH.

TO

THE CHIEF SECRETARY TO GOVERNMENT,
N.-W. PROVINCES AND OUDH.

SIR,

I HAVE the honor to submit, for the information of His Honor the Lieutenant-Governor and Chief Commissioner, the Annual Report of Mir Muhammad Husain, Assistant Director, on the Cawnpore Experimental Farm for the rabi season of 1888.

2. The report states that while the season was favourable, the average outturn was low owing to the inclusion therein of every kind of experimental plot; as this affords no real clue to the general effect of the season, the Assistant Director will be asked to give in future a second average for plots under ordinary cultivation, from which some idea can be got as to the produce realized by cultivators generally.

3. The experiments are described in the usual detail as permanent and temporary, and disclose no results of such particular novelty as to call for comment. The good effects of deep ploughing, green soiling, of gypsum when applied to leguminous crops and of the good value to be obtained in the shape of manure for many materials now neglected of the people, have all been demonstrated before, but constant repetition is needed to keep the memory of these facts green. There are some experiments, however, of former years that have been discontinued which may, I think, be revived with advantage, such as growing for statistics of produce sample fields of all the main rabi crops, the cultivation of wheat on strips, with alternate strips of fallow, the pedigreeing of wheat, experiments with fodder grasses, &c. I have given suggestions in this direction against next year's operations, the report on which will, as approved in G. O. No. $\frac{997}{1-390}$, dated 20th July, 1888, combine the results of both harvests.

I have the honor to be,

SIR,

Your most obedient servant,

D. G. PITCHER, LIEUT.-COL.,
Offg. Director.

REPORT

ON THE

CAWNPORE EXPERIMENTAL STATION

FOR THE RABI SEASON OF 1888.

THE season has been generally very favourable, still the average outturn at the station was very low. This is partly due to the continued cultivation of wheat in the same plots year after year without rotation or change in manure and partly to strong winds in February, just when many of the fields were watered which laid the plants.

2. The experiments conducted during the season may be classed as usual into (*a*) permanent, (*b*) temporary. The scheme of the permanent experiments have been fully described in previous reports.

The appended tabular statement Nos. I and II confirm the result heretofore generally obtained, *viz.* :—

(1)—That saltpetre applied either alone or combined with some other fertilizer benefits the straw more than it benefits the grain.

(2)—The percentage of grain on straw in unmanured plot is higher than in manured plot.

(3)—The most economical manure for wheat is farmyard manure.

(4)—By alternating wheat with maize its outturn is much increased.

3. *Green-soiling.*—The results of these plots are shown in statements III, IV, and V, and may be summarized as follows :—

(1)—Following wheat after indigo is more economical than ploughing the indigo as manure.

(2)—Ploughing in a green crop of hemp is a most economical way of enriching the land, and is most to be recommended for fields where farmyard manure cannot be applied with profit either owing to long distance or scarcity of manure, *vide* statement No. IV.

(3)—Indigo refuse with lime is more effective than the refuse alone, *vide* statement No. V.

In connection with these experiments, I should note that cost of indigo refuse and indigo water, as entered in the statements, is much higher than what their cost would have been had there been an indigo factory close to the station.

4. *Miscellaneous manures.*—Among these are included a number of things which are ordinarily reckoned as mere waste, and for which people in towns and in villages have to spend money simply to get rid of them. Road scrapings have this year given better results, and so also the composts and the ashes of weeds. Statement VI shows results and proves that an application of any of them is better than giving no manure.

5. *Ploughing.*—The experiment was conducted on the same plots in which it was tried in previous years : the result as last year is in favor of moderately deep ploughing. The fields ploughed 9 inches deep gave no better result than those ploughed with the country plough.

6. *Temporary experiments.*—Determination of the value of mustard and cotton cake used as manure against dung obtained from cattle fed on the same cakes. The outturn obtained from plots manured with cake was higher than that given by plots treated with the dung of cattle fed on cake, but from point of economy the latter proved the better. As in the last year, the results from mustard cake were better than those from cotton-seed cake, *vide* statements Nos. VII and VIII.

7. *Determination of duration for which the effects of certain manures last.*—They were applied in 1886 and withheld since that year. Statement No. IX shows the results. As expected, the plot manured with saltpetre is more exhausted than the plot to which the cowdung or poudrette was applied; still the results obtained from the former are not worse than from the plot to which no manure was applied.

8. *Competitive trial of Buxar and Mundia wheat.*—The seed of each variety was sown in two plots: in one sowing was done in the native way behind the plough, and in the other by a drill. Mundia, I should note, is the variety mostly grown in Cawnpore district, while the other was the produce raised last year from seed received from Bengal. Buxar wheat matured early and in the plot sown after the native fashion its produce exceeded that of Mundia by 200lb, but in the plot sown by drill it fell short by 350lb. of the outturn which the plot of Mundia similarly sown gave.

9. *Sindhi wheat.*—In appearance this variety resembles the trans-Jumna wheat; its grains are long and transparent with a somewhat reddish tinge, and its ears have a double row of grain like English barley. It matured over a week after the Muzaffarnagar variety and required one more watering: the outturn was just as good as that of Mundia, *vide* statement No. X.

10. *English wheat.*—A few ounces of wheat were received from Messrs. Praschkauer and Co. The seed took longer time to germinate: up till February the plants were only an inch high and looked more like a grass growing in tufts. At last stalks appeared and bore ears; the grain ripened a month after all the Indian varieties were gathered in, but it was very thin. The experiment confirmed that English wheat will not succeed in the lower Doab.

11. *Catch crop.*—In a field of oats, when the plants were some four inches high, lucerne seed was drilled in which germinated well, but its plants were, of course, kept down by oats. Its addition did not affect the yield of oats, which was rather more than the produce obtained from a neighbouring field to which lucerne was not added. The crop of lucerne was kept for seed and added Rs. 12 to the profit. Where water is available this system of catch-cropping can be safely recommended in fields of barley.

12. *Effect of gypsum on leguminous crops.*—Gypsum was applied to a field of peas and gram; its effect on the former was not much, but it increased the produce of the latter by 113lb. per acre. The following statement shows the result:—

Number of plot.	Crops.	Manure and quantity per acre.	*Outturn per acre.*		*Increase due to gypsum.*	
			Grain	Straw.	Grain.	Straw.
			lb.	lb.	lb.	lb.
1	Peas ...	Farmyard manure 100 maunds, gypsum 3 cwts.	1,672	1,608	32	20
2	Ditto ...	Farmyard manure 100 maunds ...	1,640	1,588	...	...
3	Gram ...	Farmyard manure 50 maunds, gypsum 3 cwts.	1,611	656	163	59
4	Ditto ...	Farmyard manure 100 yards ...	1,498	597	...	...

13. *Barley.*—With a view of ascertaining their value in the English market the following varieties of barley were sown at the station:—

1. Green.
2. Chocolate color
3. White huskless.

It was intended to grow a sufficiently large quantity, on which a definite opinion could be procured ; but more than a handful of their seed could not be procured, which has produced the following quantities :—

1. Green, 210lb.
2. Chocolate, 42lb.
3. White huskless, 95lb.

No. 3 so much resembles wheat that it would rather be well not to encourage its cultivation, as otherwise there is a fear of its being added to wheat for purposes of adulteration. Chocolate barley would perhaps, from its color, find a good market in England for malting purposes.

14. *Effect of certain manure on potatoes.*—The following statement shows the result of this experiment : it will be seen that 10 maunds of castor cake with 3 cwts. of gypsum gave nearly as good result as 500 maunds of farmyard manure or 200 maunds of poudrette, with 54lb. of iron sulphate. This is, however, the first year in which the experiment has been tried, and the results require to be confirmed for future trials :—

Number of plot.	Manure and quantity per acre.	Outturn per acre.	Increase over the last plot.
		lbs.	lbs.
1	Poudrette 200 maunds, sulphate of iron ½ cwt.	4,373	—414
2	Woollen refuse 200 maunds and gypsum 3 cwts. ...	3,080	—1,707
3	Poudrette 200 maunds and kanite 5 cwts. per acre ...	3,400	—1,387
4	Castor-oil cake 10 maunds and gypsum 3 cwts.	4,840	+ 53
5	Farmyard manure and poudrette 500 maunds	4,787	...

15. *Mangold Wurzel.*—Berkshire Yellow Globe and Sutton's Golden Tankard were sown in a field measuring half an acre and produced a total crop of 110 maunds. The cattle at the station took to them kindly this year.

16. *Ensilage.*—A large pit was filled with *chari* and the common grasses of the rainy season. It was opened in May and proved sound ; the ensilage was freely eaten by cattle.

MIR MUHAMMAD HUSAIN, M.R.A.C.,

Assistant Director.

STATEMENT No. I.—STANDARD SERIES.

Number of plots according to the map of farm.	Detail of manure.	Calculation of the result and comparison of outturn with the unmanured plot in the series.									Comparison of cost and income with the ordinary kind of cultivation in vogue in this country.										
		1	2	3	4	5	6	7	8	9	10		11			12	13	14	15
											Actual outturn per acre.		Value of outturn.						
		Value of manure per acre.	Weight of unthreshed sheaves.	Weight of grain.	Weight of straw.	Weight of grain per bushel.	Percentage of grain on straw.	Percentage of straw on grain.	Increase or decrease over unmanured plot.	Increase or decrease per acre.	Grain.	Straw.	Grain @ Rs. 1 per 41lb.	Straw @ Rs. 1 per 400lb.	Total.	Gain or loss per acre in cost against the cost of ordinary cultivation, assumed to be Rs. 30.	Gain or loss per acre in the value of outturn against ordinary cultivation, assumed to be Rs. 38.	Net profit or loss over or against the assumed income, Rs. 38.	Remarks.
		Rs. a. p.	lb.	lb.	lb.	lb.	lb.	lb.	lb.	lb.	lb.	lb.	Rs. a. p.	Rs. a. p.	Rs. a. p.	Rs. a. p.	Rs. a. p.	Rs. a. p.	
1	Saltpetre 240lb. per acre ...	10 5 0	344 0	96 0	248 0	66 0	33·7	258·3	+16	+193	1,161	3,001	28 5 0	7 8 0	35 13 0	−7 5 0	−2 3 0	−9 8 0	
2	Ditto bonedust 360lb. per acre ...	13 10 0	341 0	110 0	231 0	66 0	47·6	210·0	+30	+363	1,331	2,795	32 7 0	7 0 0	39 7 0	−10 10 0	+1 7 0	−9 3 0	
3	Cow-dung 180 maunds per acre ...	5 6 0	376 0	103 0	273 0	66 0	37·7	265·0	+23	+277	1,245	3,303	30 6 0	8 4 0	38 10 0	−2 6 0	+0 10 0	−1 12 0	
4	Ditto and bonedust 360lb. per acre	8 11 0	360 0	109 0	250 0	65 0	43·6	229·4	+29	+351	1,319	3,025	32 4 0	7 9 0	39 13 0	−5 11 0	+1 13 0	−3 14 0	
5	Ditto and gypsum 240lb. ditto ...	10 8 0	370 0	100 0	270 0	65 0	37·0	270·0	+20	+242	1,210	3,267	29 8 0	8 3 0	37 11 0	−7 8 0	−0 5 0	−7 13 0	
6	Sheep-dung 180 maunds ditto ...	5 6 0	330 0	119 0	210 0	66 0	56·7	176·5	+39	+472	1,440	2,541	35 12 0	6 6 0	42 2 0	−2 6 0	+4 2 0	+1 12 0	
7	Ashes of 180 maunds dung ...	5 8 0	257 0	67 0	190 0	64 0	35·3	283·6	−13	−157	811	2,299	19 12 0	5 12 0	25 8 0	−2 8 0	−12 8 0	−15 0 0	
8	Sheep-dung 180 maunds and bonedust 360lb.	8 11 0	253 0	79 0	274 0	65 0	28·8	346·8	−1	−17	956	3,315	23 5 0	8 5 0	31 10 0	−5 11 0	−6 6 0	−12 1 0	
9	Saltpetre 240lb. and bone-super 240,	20 0 0	323 0	92 0	231 0	65 0	39·8	251·1	+12	+145	1,113	2,791	27 2 0	7 0 0	34 2 0	−17 0 0	−3 14 0	−20 3 0	
10	Sheep-dung 180 maunds and gypsum,	10 8 0	313 0	118 0	195 0	66 0	60·5	165·2	+38	+460	1,428	2,359	34 12 0	5 14 0	40 10 0	−7 8 0	+2 10 0	−4 14 0	
11	No manure	...	207 0	80 0	127 0	65 0	62·9	158·7	...	...	968	1,537	23 10 0	3 15 0	27 9 0	+3 0 0	−10 9 0	−4 7 0	
12	Poudrette 180 maunds per acre ...	8 12 0	336 0	105 8	132 0	63 0	79·9	125·1	+25 8	+309	1,277	1,597	31 2 0	4 0 0	35 2 0	−5 12 0	−2 14 0	−8 10 0	
13	Ashes of 180 maunds dung and saltpetre.	15 13 0	371 0	158 0	213 0	65 0	74·2	134·8	+78 0	+944	1,912	2,577	46 10 0	6 7 0	53 1 0	−12 13 0	+15 0 0	+2 3 0	

Area of each plot 400 square yards.

STATEMENT No. II.—DUPLICATE SERIES.

Number of plots as per map of farm.	Detail of manures.	Calculation of the result and comparison of outturn with the unmanured plot in the series.									Comparison of cost and income with the ordinary kind of cultivation in vogue in this country.									
		1	2	3	4	5	6	7	8	9	10		11			12	13	14	15
		Value of manure per acre.	Weight of unthreshed sheaves.	Weight of grain.	Weight of straw.	Weight of grain per bushel.	Percentage of grain on straw.	Percentage of straw on grain.	Increase or decrease over standard plot in the series.	Increase or decrease per acre.	Actual outturn per acre.		Value of outturn.			Gain or loss per acre in cost against the cost of ordinary cultivation, assumed to be Rs. 30.	Gain or loss per acre in the value of outturn against ordinary cultivation, assumed to be Rs. 38.	Net profit or loss over or against the assumed income, Rs. 38.	Remarks.
											Grain.	Straw.	Grain @ Re. 1 per 41lb.	Straw @ Re. 1 per 400lb.	Total.				
		Rs. a. p.	lb. oz.	lb. oz.	lb. oz.	lb. oz.	lb. oz.	lb. oz.	lb. oz.	lb.	lb.	lb.	Rs. a. p.	Rs. a. p.	Rs. a. p.	Rs. a. p.	Rs. a. p.	Rs. a. p.	
1	Salpetre 240lb. per acre ...	10 5 0	483 0	136 0	349 0	66 0	39 0	257 0	+61 0	+739	1,646	4,223	40 2 0	10 9 0	50 11 0	−7 5 0	+12 11 0	+5 6 0	
2	Ditto bone-dust 360lb. ...	13 1 0	552 0	207 0	345 0	66 0	60 0	167 0	+132 0	+1,598	2,505	4,175	61 2 0	10 7 0	71 9 0	−10 10 0	+33 9 0	+22 15 0	
3	Cowdung 180 maunds ...	5 6 0	282 0	101 0	181 0	66 0	56 0	179 9	+26 0	+315	1,222	2,130	29 12 0	15 8 0	34 10 0	−2 6 0	−3 6 0	−5 12 0	
4	Ditto and bonedust 360lb. ...	8 11 0	224 0	82 0	132 0	66 0	62 0	161 0	+7 0	+85	992	1,597	24 3 0	14 0 0	28 3 0	−5 11 0	−9 13 0	−15 8 0	
5	Ditto and gypsum 240lb. ...	10 8 0	211 0	75 0	136 0	66 0	55 0	181 0	+	+	907	1,646	22 2 0	4 2 0	26 4 0	−7 8 0	−11 12 0	−19 4 0	
6	Ashes 180 maunds of dung ...	5 8 0	365 0	124 0	240 0	65 0	52 0	194 0	+49 0	+593	1,500	2,901	36 9 0	7 4 0	43 13 0	−2 8 0	+5 13 0	+3 5 0	
7	Sheepdung and bonedust 360lb. ...	8 11 0	332 0	123 0	259 0	66 0	47 0	211 0	+48 0	+581	1,488	3,134	36 5 0	7 13 0	44 2 0	−5 11 0	+6 2 0	+0 7 0	
8	Saltpetre 240lb. bone superphospate 240lb.	20 0 0	386 0	166 8	219 0	66 0	76 2	131 3	+91 9	+1,108	2,015	2,650	49 2 0	6 10 0	55 12 0	−17 0 0	+17 12 0	+0 12 0	
9	Sheepdung 180 maunds and gypsum 240lb.	10 8 0	198 0	77 0	121 0	66 0	63 6	157 1	+2 0	+25	932	1,464	22 12 0	3 11 0	26 7 0	−7 8 0	−11 9 0	−19 1 0	
10	Sheepdung 180 maunds ...	5 6 0	511 0	102 0	400 0	66 0	25 5	392 1	+27 0	+327	1,231	4,840	30 2 0	12 2 0	42 4 0	+2 6 0	+4 4 0	+1 14 0	
11	No manure	...	223 0	75 0	147 0	66 0	51 0	196 0	+	+	907	1,779	22 2 0	4 7 0	26 9 0	+3 0 0	−11 7 0	−14 7 0	
12	Poudrette 180 maunds	8 12 0	335 0	108 0	227 0	66 0	47 6	210 2	+[illegible]3 0	+400	1,307	2,747	31 14 0	6 4 0	38 2 0	+5 12 0	+0 2 0	−5 10 0	
13	Ashes of 180 maunds dung and saltpetre 240lb.	15 13 0	253 0	82 8	171 0	66 0	48 4	206 5	+7 8	+91	998	2,069	24 5 0	5 2 0	29 7 0	−12 13 0	−8 9 0	−21 6 0	

Area of each plot 400 square yards.

STATEMENT No. III.—GREEN MANURE SERIES.

Number of plot according to the map of Farm.	Detail of fertilizer.	Calculation of the result and comparison of outturn with unmanured plot in the series.									Comparison of cost and income with the ordinary kind of cultivation in vogue in this country.								
		1	2	3	4	5	6	7	8	9	10		11			12	13	14	15
											Actual outturn per acre.		Value of outturn.						
		Value of the fertilizer in Cawnpore Farm.	Weight of unthreshed sheaves.	Weight of grain.	Weight of straw.	Weight of grain per bushel.	Percentage of grain on straw.	Percentage of straw on grain.	Increase or decrease over standard plot in the series.	Increase or decrease per acre.	Grain.	Straw.	Grain @ Rs. 1 per 41lb.	Straw @ Rs. 1 per 440lb.	Total.	Gain or loss per acre in cost against the cost of ordinary cultivation, assumed to be Rs. 30.	Gain or loss per acre in the value of outturn against ordinary cultivation, assumed to be Rs. 38.	Net profit or loss over or against the assumed income, Rs. 38.	Remarks.
		Rs. a. p.	lb.	lb. oz.	lb.	lb.	lb.	lb.	lb. oz.	lb.	lb.	lb.	Rs. a. p.	Rs. a. p.	Rs. a. p.	Rs. a. p.	Rs. a. p.	Rs. a. p.	
1	Old indigo refuse 120 maunds per acre.	4 12 0	394	114 0	280	65	40·7	245·6	+49 0	+593	1,379	3,388	33 10 0	8 8 0	42 2 0	−1 12 0	+4 2 0	+2 6 0	
2	Fresh ditto 120 maunds and lime 6 maunds.	6 8 0	368	123 0	245	66	50·2	199·1	+58 0	+702	1,488	2,964	36 5 0	7 7 0	43 12 0	−3 8 0	+5.12 0	+2 4 0	
3	Indigo water 3,600 cubic feet ...	37 0 0	216	71 8	143	66	50·0	200·0	+6 8	+79	865	1,730	21 2 0	4 5 0	25 7 0	−34 0 0	−12 9 0	−46 9 0	
4	Hemp water ditto	18 8 0	161	56 0	104	...	53·8	185·7	−9 0	−108	678	1,258	16 9 0	3 2 0	19 11 0	−15 8 0	−18 5 0	−33 13 0	
5	No manure	...	181	65 0	116	...	56·0	178·4	...	...	786	1,379	19 3 0	3 7 0	22 10 0	+3 0 0	−15 6 0	−12 6 0	
6	Green indigo ploughed in ...	2 12 0	235	76 0	159	66	47·8	209·2	+11 0	+134	920	1,924	22 1 0	4 13 0	26 14 0	+0 4 0	−11 2 0	−10 14 0	
7	Wheat sown after indigo ...	1 8 0	366	114 0	252	66	45·2	221·6	+49 0	+593	1,379	3,049	33 10 0	7 10 0	41 4 0	+1 8 0	+3 4 0	+4 12 0	
8	Indigo crop ploughed and 6 maunds gypsum.	13 7 0	188	51 0	126	...	40·5	247·1	−14 0	−169	617	1,525	15 1 0	3 13 0	18 14 0	−10 7 0	−19 2 0	−29 9 0	
9	Hemp and gypsum as above ...	13 12 0	208	72 0	136	64	52·9	188·9	+7 0	+85	871	1,646	21 4 0	4 2 0	25 6 0	−10 12 0	−12 10 0	−23 6 0	
10	Wheat after lucern	...	234	82 0	152	66	53·9	185·4	+7 0	+206	992	1,839	24 3 0	4 10 0	28 13 0	+3 0 0	−9 3 0	−6 3 0	
11	Wheat sown after hemp ...	...	259	86 0	173	66	49·7	201·2	+201 0	+255	1,041	2,093	25 6 0	5 4 0	30 10 0	+3 0 0	−7 6 0	−3 6 0	
12	Hemp ploughed when 4 feet high ...	3 4 0	275	75 0	199	66	37·7	265·3	+10 0	+121	907	2,408	22 1 0	6 0 0	28 1 0	−0 4 0	−9 15 0	−9 3 0	

STATEMENT No. IV.

Number.	Detail of fertilizer.	Calculation of the results and comparison of outturn with the unmanured plot in the series									Comparison of cost and income with the ordinary kind of cultivation in vogue in this country.								
		1	2	3	4	5	6	7	8	9	10		11			12	13	14	15
		Cost of the fertilizer in Cawnpore Farm.	Weight of unthreshed sheaves	Weight of grain	Weight of straw.	Weight of grain per bushel	Percentage of grain on straw.	Percentage of straw on grain	Increase or decrease over standard plot in the series	Increase or decrease per acre	Actual outturn per acre.		Value of outturn.			Gain or loss per acre in cost against the cost of ordinary cultivation, assumed to be Rs 30.	Gain or loss per acre in the value of outturn against ordinary cultivation, assumed to be Rs. 38.	Net profit or loss over or against the assumed income, Rs. 38.	Remarks.
											Grain.	Straw.	Grain @ Re. 1 per 41lb.	Straw @ Re 1 per 400lb.	Total.				
		Rs. a. p.	lb. oz	lb. oz.	lb.	lb.	lb.	lb	lb.	lb.	lb.	lb.	Rs. a. p.	Rs. a. p.	Rs. a. p.	Rs. a. p	Rs. a. p.	Rs. a. p	
1	Hemp ploughed	3 4 0	1,808½	643 14	1,148 6	65 8	54 ½	183 ½	...	...	1,285¼	2,292¼	31 5 0	5 11 0	37 0 0	−0 4 0	−1 0 0	−1 4 0	
2	Unmanured	...	721½	226¼	469½	66 0	50½	204	—10	..	587	1,157	14 5 0	2 14 0	17 3 0	+3 0 0	−20 13 0	−17 13 0	

Note—Average area of the plots { (1) of 2,424 square yards. (2) of 1,945 ditto.

STATEMENT No. V.

Number of plots according to the map of Farm.	Detail of fertilizer.	Calculation of the result and comparison of outturn with the unmanured plot in the series.									Comparison of cost and income with the ordinary kind of cultivation in vogue in this country.									
		1	2	3	4	5	6	7	8	9	10		11			12	13	14	15
		Cost of the fertilizer in Cawnpore Farm.	Weight of unthreshed sheaves.	Weight of grain.	Weight of straw.	Weight of grain per bushel.	Percentage of grain on straw.	Percentage of straw on grain.	Increase or decrease over standard plot in the series.	Increase or decrease per acre.	*Actual outturn per acre.*		*Value of outturn.*			Gain or loss per acre in cost against the cost of ordinary cultivation, assumed to be Rs. 30.	Gain or loss per acre in the value of outturn against ordinary cultivation, assumed to be Rs. 38.	Net profit or loss over or against the assumed income, Rs. 38.	Remarks.
											Grain.	Straw.	Gain @ Re. 1 per 41lb.	Straw @ Re. 1 per 400lb.	Total.				
		Rs. a. p.	lb.	lb.	lb.	lb.	lb.	lb.	lb.	lb.	lb.	lb.	Rs. a. p.	Rs. a. p.	Rs. a. p.	Rs. a. p.	Rs. a. p	Rs. a. p.	
1	Fresh indigo refuse 120 maunds and lime 6 maunds.	6 8 0	341·0	118½	222½	66	53·3	187·8	+35½	+212	717	1,346	17 8 0	3 6 0	20 14 0	−3 8 0	−17 2 0	−20 10 0	
2	Ditto ditto alone ...	4 0 0	280 0	82 0	192·0	66	42·7	234·2	−1	−6	496	1,162	12 2 0	2 14 0	15 0 0	−1 12 0	−23 0 0	−24 12 0	
3	Old indigo refuse 120 maund and lime 6 maunds.	6 8 0	435·0	174½	260½	66	67·	149·3	+91½	+554	1,056	1,576	25 12 0	3 15 0	29 11 0	−3 8 0	−8 5 0	−11 13 0	
4	Ditto ditto alone ...	4 12 0	348·0	112·0	236·0	66	47·5	210·7	+29	+176	678	1,428	16 9 0	3 9 0	20 2 0	−1 12 0	−17 14 0	−19 10 0	
5	No manure	...	236·0	83·0	163·0	66	50·9	196·4	...	...	502	986	12 4 0	2 7 0	14 11 0	+3 0 0	−23 5 0	−20 5 0	

Area 800 square yards.

STATEMENT No. VI.—MISCELLANEOUS SERIES.

Number.	Detail of manure.	Calculation of the result and comparison of outturn with the unmanured plot in the series.									Comparison of cost and income with the ordinary kind of cultivation in vogue in this country.											Remarks.
		1	2	3	4	5	6	7	8	9	10		11			12	13	14	15	
		Value of manure per acre.	Weight of unthreshed sheaves.	Weight of grain.	Weight of straw.	Weight of grain per bushel.	Percentage of grain on straw.	Percentage of straw on grain.	Increase or decrease over standard plot in the series.	Increase or decrease per acre.	Actual outturn per acre. Grain.	Actual outturn per acre. Straw.	Value of outturn. Grain @ Re. 1 per 11lb.	Value of outturn. Straw @ Re. 1 per 400lb.	Value of outturn. Total.	Gain or loss per acre in cost against the cost of ordinary cultivation, assumed to be Rs 30	Gain or loss per acre in the value of outturn against ordinary cultivation, assumed to be Rs 38.	Net profit or loss over or against the assumed income, Rs. 38.		
		Rs. a. p	lb.	lb.	lb.	lb.	lb.	lb.	lb.	lb.	lb.	lb.	Rs. a. p.	Rs. a. p	Rs. a. p.	Rs. a. p	Rs. a. p.	Rs. a. p		
1	Brick-kiln refuse 120 maunds per acre...	1 12 0	160 0	39 0	121 0	...	32 2	310 3	+10	+121	47½	1,464	11 8 0	3 15 0	15 7 0	+1 4 0	−22 9 0	−21 5 0		
2	Silt 300 maunds per acre	0 12 0	193 0	46 0	97 0	66	...	210·9	+7	+206	...	1,174	13 11 0	2 15 0	16 11 0	+2 4 0	−21 6 0	−19 2 0		
3	Compost 200 maunds per acre ...	6 0 0	190 0	57½	132 0	+	43·4	280·6	+28½	+342	693	1,597	16 14 0	4 0 0	20 4 0	−3 0 0	−17 12 0	−29 12 0		
4	Road-scraping 300 maunds per acre ...	4 11 0	195 0	60½	134 0	+	45·1	221·5	+31½	+381	732	1,621	17 14 0	4 1 0	21 15 0	−1 11 0	−16 1 0	−17 12 0		
5	Ashes of 180 maunds weeds ...	4 1 0	160 0	56 0	96 0	+	58·3	171·4	+27	+327	678	1,162	16 7 0	2 14 0	19 5 0	−1 0 0	−18 11 0	−19 11 0		
6	Ditto ditto salt petre 240lb....	14 3 6	162 0	42 0	120 0	+	35·0	285·7	+13	+157	508	1,452	12 6 0	3 10 0	16 0 0	−11 3 0	−22 1 0	−33 3 0		
7	Ammonic chloride 240lb.	44 0 0	140 0	30 0	110 0	+	27 3	366 7	+1	+12	363	1,331	8 14 0	3 5 0	12 3 0	−41 0 0	−25 13 0	−66 13 0		
8	No manure	...	115 0	29 0	86 0	+	33·7	296·6	...	...	351	1,041	8 9 0	2 10 0	11 3 0	+3 0 0	−26 13 0	−23 13 0		

Area of each plot 400 square yards.

STATEMENT No. VII.

Detail of manure.	Calculation of the result and comparison of outturn with the unmanured plot in the series.									Comparison of cost and income with the ordinary kind of cultivation in vogue in this country.									
	1	2	3	4	5	6	7	8	9	10		11			12	13	14	15
										Actual outturn per acre.		*Value of outturn.*						
	Cost of manure on Cawnpore Farm.	Weight of unthreshed sheaves.	Weight of grain.	Weight of straw.	Weight of grain per bushel.	Percentage of grain on straw.	Percentage of straw on grain.	Increase or decrease over unmanured plot.	Increase or decrease per acre.	Grain.	Straw.	Grain @ Re. 1 per 41lb.	Straw @ Re. 1 per 400lb.	Total.	Grain or loss per acre in cost against the cost of ordinary cultivation, assumed to be Rs. 30.	Gain or loss per acre in the value of outturn against ordinary cultivation, assumed to be Rs. 38.	Net profit or loss over or against the assumed income, Rs. 38	Remarks.
	Rs. a. p.	lb.	lb.	lb.	lb.	lb.	lb.	lb.	lb.	lb.	lb.	Rs. a. p.	Rs. a. p.	Rs. a. p.	Rs. a. p.	Rs. a. p.	Rs. a. p.	
Mustard cake 5 maunds per acre ...	8 1 0	437	129½	307½	65	42-1	237-5	+35½	+281	1,024	2,432	25 0 0	6 1 0	31 1 0	−5 1 0	−6 15 0	−12 0 0	
Ditto 10 maunds per acre ...	16 0 0	470	164	306	66	53-6	186-6	+70	+554	1,297	2,420	31 10 0	6 1 0	37 11 0	−13 1 0	+0 5 0	−13 6 0	
Plain cowdung 200 maunds per acre ...	6 0 0	490	123	347	66	35-4	282-1	+29	+230	973	2,744	23 12 0	6 14 0	30 10 0	−3 0 0	−7 6 0	−10 6 0	
Cake-fed dung 50 maunds per acre ...	2 0 0	377	109	208	65	52-4	190-8	+15	+119	862	1,645	21 0 0	4 2 0	25 2 0	+1 0 0	−12 14 0	−11 14 0	
Ditto 100 maunds ...	4 0 0	394	107	287	66	37-3	268-2	+13	+103	846	2,270	20 10 0	5 11 0	26 5 0	−1 0 0	−11 11 0	−12 11 0	
No manure	...	345	94	251	66	37-4	267-0	...	...	743	1,985	18 2 0	4 15 0	23 1 0	+3 0 0	−14 15 0	−11 15 0	

Area 612 square yards.

STATEMENT No. VIII.

Detail of manure.	Calculation of the result and comparison of outturn with the unmanured plot in the series.									Comparison of cost and income with the ordinary kind of cultivation in vogue in this country.									
	1	2	3	4	5	6	7	8	9	10		11			12	13	14	15
										Actual outturn per acre.		Value of outturn.						
	Cost of the manure in Cawnpore Farin.	Weight of unthreshed sheaves.	Weight of grain	Weight of straw.	Weight of grain per bushel.	Percentage of grain on straw.	Percentage of straw on grain.	Increase or decrease over unmanured plot.	Increase or decrease per acre.	Grain.	Straw.	Grain @ Re. 1 per 41lb.	Straw @ Re. 1 per 400lb.	Total.	Gain or loss per acre in cost against the cost of ordinary cultivation, assumed to be Rs. 30.	Gain or loss per acre in the value of outturn against ordinary cultivation, assumed to be Rs. 38.	Net profit or loss over or against the assumed income, Rs. 38.	Remarks.
	Rs. a. p	lb.	lb.	lb.	lb.	lb.	lb.	lb.	lb.	lb.	lb.	Rs. a. p.	Rs. a. p.	Rs. a. p.	Rs. a. p.	Rs. a. p.	Rs. a. p.	
Cotton seed fed dung 50 maunds ...	2 0 0	260	108	152	65	71·0	140·7	+13	+103	854	1,202	20 13 0	3 0 0	23 13 0	+1 0 0	−14 3 0	−13 3 0	
Cotton seed 10 maunds per acre ...	4 0 0	365	146	219	65	66·7	150·0	+51	+404	1,155	1,732	28 3 0	4 5 0	32 8 0	−1 6 0	−5 8 0	−6 8 0	
Plane cowdung 200 maunds per acre ...	6 0 0	270	113	215	65½	52 6	190·3	+18	+143	894	1,700	21 13 0	4 4 0	26 1 0	−3 0 0	−11 15 0	−14 5 0	
Perished cotton seed 5 maunds per acre ...	6 15 0	306	103	203	66	50·7	197·0	+8	+64	815	1,605	19 14 0	4 0 0	23 14 0	−3 15 0	−14 2 0	−18 1 0	
Ditto ditto 10 maunds ...	16 1 0	340	150	290	66	51·7	193·3	+55	+435	1,186	2,293	28 15 0	5 12 0	34 11 0	−13 1 0	−3 5 0	−16 6 0	
No manure	...	281	95	186	66	51·1	195 8	...	...	751	1,471	18 5 0	3 11 0	22 0 0	+3 0 0	−16 0 0	−13 0 0	

Area of each plot 612 square yards.

STATEMENT No. IX.

Detail of manure.	Calculation of the result and comparison of outturn with the unmanured plot in the series.									Comparison of cost and income with the ordinary kind of cultivation in vogue in this country.									
	1	2	3	4	5	6	7	8	9	10		11			12	13	14	15
	When applied.	Weight of unthreshed sheaves.	Weight of grain.	Weight of straw	Weight of grain per bushel.	Percentage of grain on straw.	Percentage of straw on grain.	Increase or decrease over unmanured plot.	Increase or decrease per acre.	Actual outturn per acre.		Value of outturn.			Gain or loss per acre in cost against the cost of ordinary cultivation, assumed to be Rs 30.	Gain or loss per acre in the value of outturn against ordinary cultivation, assumed to be Rs. 38.	Net profit or loss over or against the assumed income, Rs 38.	Remarks.
										Grain.	Straw.	Grain @ Re. 1 per 41lb	Straw @ Re. 1 per 400lb.	Total.				
		lb.	lb.	lb	lb.	lb.	lb.	lb.	lb.	lb.	lb.	Rs. a. p	Rs. a. p	Rs. a. p	Rs. a p	Rs a. p.	Rs. a. p	
Cowdung 300 maunds per acre	These manures were applied in Rabi, 1885-86	250	100	150	66	66 6	150 0	+ 52	+ 631	1,210	1,815	29 8 0	4 9 0	34 1 0	+ 3 0 0	– 3 15 0	–0 15 0	
Poudrette 200 maunds		190	75	115	66	65 2	153 3	+ 27	+ 327	9,087	1,391	22 3 0	3 8 0	25 11 0	+ 3 0 0	–12 15 0	– 9 15 0	
Oil-cake 300 maunds per acre		153	59	94	...	62 8	159 3	+ 11	+ 133	714	1,137	17 7 0	2 13 0	20 4 0	+ 3 0 0	–17 12 0	–14 12 0	
Woollen refuse 120 maunds		165	62	103	..	60 2	166 6	+ 14	+ 69	750	1.246	18 8 0	3 2 0	21 10 0	+ 3 0 0	–16 6 0	–13 6 0	
Cowdung and bone-dust 200 maunds ...		140	58	92	...	63 0	158 6	+ 10	+ 121	702	1.113	17 2 0	2 13 0	19 15 0	+ 3 0 0	–18 1 0	–15 1 0	
Compost 300 maunds per acre		170	58	112	..	51 8	193 1	+ 10	+ 121	702	1,355	17 2 0	3 6 0	20 8 0	+ 3 0 0	–17 8 0	–14 8 0	
Green manure		150	51	99	...	51 5	194 1	+ 3	+ 36	617	1,198	15 1 0	3 0 0	18 1 0	+ 3 0 0	–19 15 0	–16 15 0	
Saltpetre 240lb. per acre		150	52	98	...	53 1	188 5	+ 4	+ 48	629	1,186	15 5 0	2 15 0	18 4 0	+ 3 0 0	–19 12 0	–16 12 0	
Ammonic chloride		160	57	103	...	55 3	180 7	+ 9	+ 109	690	1,246	16 13 0	3 2 0	19 15 0	+ 3 0 0	–18 1 0	–15 1 0	
No manure		135	48	87	...	55 2	181 2	...	...	581	1,053	14 3 0	2 10 0	16 13 0	+ 3 0 0	–21 3 0	–18 3 0	

Area of each plot 400 square yards.

STATEMENT X.

Varieties of wheat sown to compare their yield with country or Mundia wheat.	Calculation of the result and comparison of outturn with the standard plot in the series.						Comparison of cost and income with the ordinary kind of cultivation in vogue in this country.									
	1	2	3	4	5	6	7		8			9	10	11	12
	Weight of unthreshed sheave.	Weight of grain.	Weight of straw	Weight of grain per bushel.	Percentage of grain on straw.	Percentage of straw on grain.	*Actual outturn per acre.*		*Value of outturn.*			Gain or loss per acre in cost against the cost of ordinary cultivation, assumed to be Rs 30.	Gain or loss per acre in the value of outturn against ordinary cultivation, assumed to be Rs 38.	Net profit or loss over or against the assumed income Rs. 38	Remarks.
							Grain	Straw.	Grain @ Re. 1 per 41 lbs.	Straw @ Re. 1 per 400 lbs.	Total.				
	lb.	lb	lb.	lb.	lb.	lb.	lb.	lb.	Rs. a. p.	Rs. a. p.	Rs. a. p.	Rs. a. p.	Rs. a. p.	Rs. a. p.	
Buxar wheat from acclamatized seed, (sown after country fashion) ...	1,029	* 356	673	64	53	189	949	1,795	23 4 0	4 8 0	27 12 0	−1 8 0	−10 4 0	−11 12 0	
Country or Mundia wheat sown as above ..	2,049	554	1,490	65	37	269	739	1,987	18 0 0	4 15 0	22 15 0	−1 8 0	−15 1 0	−16 9 0	
Buxar wheat sown with drill... ...	1,392	440	952	64	46	216	1,173	2,539	28 10 0	6 6 0	35 0 0	−1 8 0	−3 0 0	−4 8 0	Fell down.
Mundia wheat sown as above ...	22,749	1,144	1,605	...	71	140	1,525	2,140	37 3 0	5 6 0	42 9 0	−1 8 0	+4 9 0	+3 1 0	
Sendhi wheat sown after country way ...	1,152	384	768	64	50	200	768	1,536	18 12 0	3 13 0	22 9 0	−1 8 0	−15 7 0	−16 15 0	

* The difference in quantity is due to the difference in area of the plots in which the different wheats were sown thus—
(1) Buxar wheat plot of 1,815 square yards,
(2) Mundia " " 3,630 "
(3) Sendhi " " 2,420